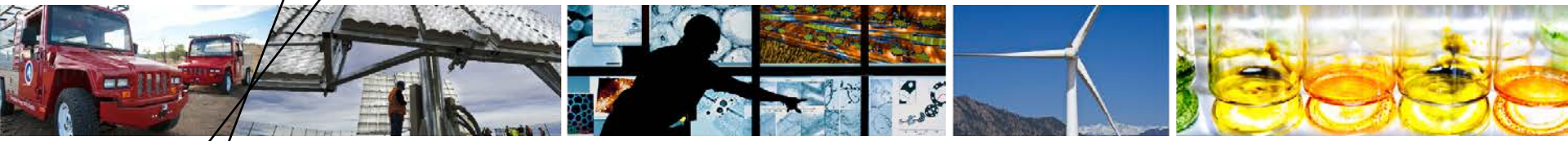
NREL
NATIONAL RENEWABLE ENERGY LABORATORY

IEC Technical Specification for PV Module Quality Management Systems



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SPI Workshop: Ensuring Quality of PV Modules

Introduction

- **Task Group 1 of PVQAT wrote:**

"Proposal for a Guide for Quality Management Systems for PV Manufacturing: Supplemental Requirements to ISO 9001-2008"

- **This can be found on the NREL web site.**
- **PVQAT wished to make this an international standard through IEC.**
- **However, the PV Technical Committee (IEC TC82) can not write an ISO 9000 document.**

Introduction (Continued)

- **To work around this the document was renamed and reorganized as:**

"Guideline for Increased Confidence in PV Module Design Qualification and Type Approval"

- **So it is telling manufacturers what their Quality System requires to increase the confidence that the production modules will continue to meet the quality implied by passing the module qualification tests (IEC 61215 for crystalline Si or IEC 61646 – for thin films).**
- **This title was acceptable to IEC.**

Status of Document

- **QMS Guideline document was submitted to IEC Central Office by TC82.**
- **It was accepted as a New Work item with the number IEC 62941 TS (TS means Technical Specification – so it will not be an International Standard when first published)**
- **A combined group of PVQAT Task Group 1 members and Working Group 2 (Modules) Project Team members appointed by their National Committees to work on IEC 62941 has been actively revising the document to respond to comments made by National Committees and by PVQAT members.**

Status Continued

- A new Committee Draft (CD) of the document was completed this summer.
- This committee draft has been submitted to IEC.
- National Committee comments on this document are due to IEC on Oct. 31, 2014.
- US TAG will have teleconference on Oct. 27 at 2 pm MDT to finalized US comments.
- If you want to participate contact me for dial-in and webex info.

Scope

This International Guideline is applicable to sites manufacturing photovoltaic (PV) modules certified to IEC 61215 or IEC 61646 for design qualification and type approval. The design qualification and type approval of PV modules depend on appropriate methods for product and process design, as well as appropriate control of materials and processes used to manufacture the product. This Guideline lays out best practices for product design, manufacturing processes, and selection and control of materials used in the manufacture of PV modules that have met the requirements of IEC 61215 or IEC 61646. These guidelines also form the basis for factory audit criteria of such sites by various certifying and auditory bodies.

Scope - continued

The object of this guideline is to provide more confidence in the ongoing consistency of performance and reliability of certified PV modules. The requirements of this guideline are defined with the assumption that the quality management system of the organization has already fulfilled the requirements of ISO9001 or equivalent quality management system. By maintaining a manufacturing system in accordance with this guideline, PV modules are expected to maintain their performance as determined from the test sequences in IEC 61215 or IEC 61646.

Introduction to Breakout Session

- **What is appropriate level of detail for the Guideline?**
- **Should the QMS document contain more (or less) technical detail than is in the present draft?**
- **Should the collective knowledge of the PV industry be applied to the document to guide module manufacturers and the audit and certification functions?**

Technical Detail

- **We know certain things are important in the manufacturing of PV modules.**
  - Quality of solder bonds
  - Degree of cure of the encapsulant
  - Presence of Broken cells
  - Quality of the junction box adhesion
- **Should our QMS TS call these and others out specifically?**
- **If so should it be dictate behavior – like make cure level measurements every so often - or should it just ask manufacturers to indicate how they control that process and how they know that their method works?**

Where/how would we add more detail?

- **Within the body of the document?**
- **In an audit check list that is included as an appendix?**
- **In a second edition?**
- **Other ideas?**